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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,573	03/03/2004	Dae Hyun Kim	HI-0191	3106

34610 7590 08/03/2007

KED & ASSOCIATES, LLP
P.O. Box 221200
Chantilly, VA 20153-1200

EXAMINER	
LESPERANCE, JEAN E	
ART UNIT	**PAPER NUMBER**
2629	
MAIL DATE	**DELIVERY MODE**
08/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/791,573	KIM ET AL.	
	Examiner	Art Unit	
	Jean E. Lesperance	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-5 and 8-19* is/are allowed.

6)☒ Claim(s) *6 and 7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The application filed March 3, 2004 is presented for examination and claims 1-19 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,530,561 to Shimazaki in view of PSPN 6,556,214 to Yamada et al.

Regarding claim 6, Shimazaki teaches a driving method of a display panel in which erroneous data for a certain pixel is diffused to a plurality of pixels adjacent to the certain pixel, the driving method comprising the steps of:

generating at least one random value (Fig.4; the Random Number generator 22 produces the random number R(x,y); column 5, line 67) ;

respectively multiplying the at least one random value to at least one coefficient value (Fig.4; the random number R(x,y) is multiplied at multiplier 30 with a weighting coefficient (f(I(x,y)) from the Weighting coefficient memory 20; column 5, lines 66 and 67); and

respectively multiplying the plurality of coefficient values multiplied with

the at least one random value, with the erroneous data (Fig.4; the erroneous data, E(x,y) from the erroneous memory 16, are multiplied with the product of the coefficient values and random values at a sum of products calculator 40; the sum of products is the summation of the products of the output of multiplier 30 with an error data, in a manner analogous to equation 5, therefore necessarily provides multiplication).

Shimazaki does not teach that the display is a plasma display panel. Shimazaki's invention, however, is relevant to reproducing a gradation image on a display using error diffusion (column 1, line 16). In a analogous environment , Yamada teaches a plasma display panel (Fig.1, PDP 6; column 11, lines 1-11) for providing a multilevel image (gradation image, column 3, line 46) using error diffusion (column 2, lines 19 and 20). Shimazaki's invention provides an advantage of producing a binary gradation image which is less susceptible to an undesirable texture and free from coarseness (column 2, lines 39-41). This is in agreement with Yamada's desire to reduce deterioration that occurs in image quality when there are insufficient display levels (column 1, lines 12 and 13). Therefore, it would have been obvious to one of ordinary skill in the art to implement Shimazaki's method with a plasma display panel as taught by Yamada.

Regarding claim 7, Shimazaki teaches the random value is randomly generated as any one of 1 to n (The error signal E(x,y) is stored in the error memory 16. In the calculation of the equation (4), if the multi-valued image signal I(x,y) is of 8 -bit data, then the binary image signal P(x,y) is converted into 8 -bit

data according to the following equation (3') (column 4, lines 63-67) wherein the binary image signal 0 and 1 which are any one of 1 to n.

Allowable Subject Matter

3. Claims 1-5 and 8-19 are allowed.

The following is an examiner's statement of reasons for allowance: the claimed invention is directed to a driving method of a plasma display panel.

Independent claim 1 identifies a uniquely distinct feature "respectively multiplying erroneous data corresponding to a difference between the first grayscale data and the second grayscale data with preset coefficient values to diffuse the multiplied result to a plurality of pixels adjacent to the pixel, wherein before the erroneous data are respectively multiplied with the preset coefficient values, a random value is multiplied to at least one coefficient value among the plurality of coefficient values".

Independent claim 8 identifies a uniquely distinct feature "first adding means for adding multiplied values respectively outputted from the plurality of multiplying means, to one another, second adding means for adding the added values outputted from the first adding means with a third grayscale data inputted next to the first grayscale data and at least one random generating means for generating at least one random value to supply the generated random value to at least one multiplying means among the plurality of multiplying means".

Conclusion

4. Any inquiry concerning this communication or earlier communications from the ably examiner should be directed to Jean Lesperance whose telephone number is (571) 272-7692. The examiner can normally be reached on from Monday to Friday between 10:OOAM and 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (571) 272-7691.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(571) 273-8300 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Jean Lesperance

Jean Lesperance

Art Unit 2629

Date 7/30/2007

RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600